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AF/IRW

TRANSMITTAL OF APPEAL BRIEF

Docket No.
44452A US

In re Application of: Felix Achille

Application No.	Filing Date	Examiner	Group Art Unit
09/903,362-Conf. #9554	July 11, 2001	T. T. Tran	1711

Invention: THERMOPLASTIC SUPERABSORBENT POLYMER BLEND COMPOSITIONS AND THEIR PREPARATION

TO THE COMMISSIONER OF PATENTS:

Transmitted herewith is the Appeal Brief in this application, with respect to the Notice of Appeal filed: August 23, 2006 .

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Dated: October 23, 2006

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Application No. (if known): 09/903,362 Attorney Docket No.: 44452A US

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Docket No.: 44452A US
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Felix Achille

Application No.: 09/903,362 Confirmation No.: 9554

Filed: July 11, 2001 Art Unit: 1711

For: THERMOPLASTIC SUPERABSORBENT POLYMER BLEND COMPOSITIONS AND THEIR PREPARATION Examiner: T. T. Tran

APPEAL BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

As required under § 41.37(a), this brief is filed within two months of the Notice of Appeal filed in this case on August 23, 2006, and is in furtherance of said Notice of Appeal.

The fees required under § 41.20(b)(2) are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1206:

I. REAL PARTY IN INTEREST

The real party in interest for this appeal is:

Dow Global Technologies Inc.

II. RELATED APPEALS, INTERFERENCES, AND JUDICIAL PROCEEDINGS

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

A. Total Number of Claims in Application

There are 19 claims pending in application.

B. Current Status of Claims

1. Claims canceled: 7, 12-31
2. Claims withdrawn from consideration but not canceled:
3. Claims pending: 1-6, 8-11, and 32-40
4. Claims allowed:
5. Claims rejected: 1-6, 8-11, 32-33, and 36-40
6. Claims objected: 34-35

C. Claims On Appeal

The claims on appeal are claims 1-6, 8-11, and 32-40.

IV. STATUS OF AMENDMENTS

Applicant did not file any amendment subsequent to the final rejection..

V. SUMMARY OF CLAIMED SUBJECT MATTER

In a first embodiment, the present invention is an extruded, melt-mixed thermoplastic resin/superabsorbent polymer blend composition consisting essentially of (a) one or more superabsorbent polymers and (b) one or more thermoplastic resins having a functional group which interacts ionically or covalently with the superabsorbent polymers. See page 3, lines 20-24; page 5, lines 22-24; and page 7, lines 21-29. The thermoplastic resin is selected from the group consisting of a polyacrylic acid, ethylene and acrylic acid copolymer, ethylene, t-butylacrylate and acrylic acid terpolymer, ethylene and methacrylic acid copolymer, ionomers of ethylene and methacrylic acid

copolymers, ethylene, vinyl acetate and carbon monoxide terpolymer, ethylene and carbon monoxide copolymer, ethylene, acrylic acid and carbon monoxide terpolymers, ethylene, n-butylacrylate and carbon monoxide terpolymer or blends thereof. See page 6, lines 4-11.

In a second embodiment, the present invention is also a method for preparing an extruded thermoplastic superabsorbent polymer blend composition including the step of extruding a melt-mixed combination of (a) one or more superabsorbent polymers and (b) one or more thermoplastic resins comprising a functional group which interacts ionically or covalently with the superabsorbent polymers. See page 3, lines 20-24; page 5, lines 22-24; and page 7, lines 21-29. The thermoplastic resin is selected from the group consisting of a polyacrylic acid, ethylene and acrylic acid copolymer, ethylene, t-butylacrylate and acrylic acid terpolymer, ethylene and methacrylic acid copolymer, ionomers of ethylene and methacrylic acid copolymers, ethylene, vinyl acetate and carbon monoxide terpolymer, ethylene and carbon monoxide copolymer, ethylene, acrylic acid and carbon monoxide terpolymers, ethylene, n-butylacrylate and carbon monoxide terpolymer or blends thereof. See page 6, lines 4-11.

In another embodiment, the present invention is an extruded thermoplastic superabsorbent polymer blend composition consisting essentially of (a) one or more superabsorbent polymers and (b) one or more thermoplastic resins comprising a functional group which interacts ionically or covalently with the superabsorbent polymers. See page 3, lines 20-24; page 5, lines 22-24; and page 7, lines 21-29. The thermoplastic resin is selected from the group consisting of a polyacrylic acid, ethylene and acrylic acid copolymer, ethylene, t-butylacrylate and acrylic acid terpolymer, ethylene and methacrylic acid copolymer, ionomers of ethylene and methacrylic acid copolymers, ethylene, vinyl acetate and carbon monoxide terpolymer, ethylene and carbon monoxide copolymer, ethylene, acrylic acid and carbon monoxide terpolymers, ethylene, n-butylacrylate and carbon monoxide terpolymer or blends thereof. See page 6, lines 4-11. The composition has a melt draw down rate between about 5 and about 100 feet per minute and a melt tension between about 0.1 and about 10 under temperature and applied load conditions that give a melt flow rate of between about 0.1 and about 300 g/10 min. See page 7, line 30 – page 8, line 6.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The Examiner has rejected Claims 10-11 under 35 USC 102(b), contending that the Korpman (U.S. Patent No. 4,318,408) anticipates the claimed invention.

The Examiner has also rejected Claims 1-6, 8-11, 32-33, and 36-40 under 35 USC 103(a), contending that Korpman renders the claimed inventions obvious.

Finally, the Examiner has objected to Claims 34-35, contending that they are dependent upon a rejected base claim. The Examiner further states that Claims 34-35 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant acknowledges the Examiner's indication that Claims 34-35 contain allowable subject matter. However, Applicant wishes to defer any amendments to Claims 34-35 upon the belief that rejected base claims also contain allowable subject matter.

VII. ARGUMENT

Applicant acknowledges the authorization to set forth its argument for each ground of rejection under separate headings; however, Applicant believes that each ground of rejection would be more reasonably addressed in a single argument. Essentially, each ground of rejection turns on a single issue: Did the Examiner improperly read Korpman to include thermoplastic polymers, and as such, should the Board of Patent Appeals and Interferences determine Claims 1-6, 8-11, 32-33, and 36-40 are patentable over Korpman?

Korpman is directed to a flexible non-disintegrative absorbent product comprising a water-insoluble substantially non-swelling matrix of an **elastomeric** polymer bearing a uniformly dispersed particulate water-insoluble water-swellable organic product absorbent. See Korpman abstract. In pertinent part, Korpman describes the matrix in the absorbent product of his invention as comprising an **elastomer**, preferably a *thermoplastic* **elastomeric** block copolymer. See column 8, lines 15-18.

The present invention is directed to (a) an extruded, melt-mixed thermoplastic resin/superabsorbent polymer blend composition, (b) a method for preparing an extruded thermoplastic superabsorbent polymer blend composition, and (c) an extruded thermoplastic superabsorbent polymer blend composition. In each instance, the present invention is made from,

contains, or uses a thermoplastic resin. It is not made from, does not contain, and does not use an elastomer.

As a person skilled in the art, Korpman recognized that the term "elastomer" and "thermoplastic" were not synonymous. Notably, Korpman described the general class of polymers suitable for use in his invention as elastomers. Secondly, he described a preferred subclass of elastomers as thermoplastic elastomeric block copolymers. He did not describe the subclass as thermoplastic thermoplastic block copolymers or elastomeric elastomeric block copolymers. Korpman, like other persons skilled in the art, recognized that elastomers and thermoplastics are not the same materials. Korpman does not teach the use of a thermoplastic or suggest the usefulness of a thermoplastic in his specification or claimed invention.

However, the Examiner substitutes his judgment for that of Korpman and others skilled in the art when the Examiner writes that Korpman teaches an extruded **thermoplastic** superabsorbent polymer composition and a method of making. See Paragraphs 4 and 6 of the Office Action mailed 23 February 2006. The Examiner's assertion is completely in opposition to the explicit language of Korpman and to the knowledge of a person skilled in the art.

Applicant also makes of record its prior Remarks in response to the Office Action mailed 28 June 2005, wherein Applicant provided the following definitions and comments. The Condensed Chemical Dictionary, Twelfth Edition (1991), defines "elastomer" as follows:

> As originally defined by Fisher (1940), this term referred to synthetic thermosetting high polymers having properties similar to those of vulcanized natural rubber, namely, the ability to be stretched to at least twice their original length when released. Among the better known elastomers introduced since the 1930s are styrene-butadiene copolymer, polychloroprene (neoprene), nitrile rubber, butyl rubber, polysulfide rubber ("Thiokol"), cis-1,4-polyisoprene, ethylene-propylene terpolymers (EPDM rubber), silicon rubber and polyurethane rubber. These can be cross-linked with sulfur, peroxides, or similar agents. The term was later extended to included uncrosslinked polyolefins that are thermoplastic; these are generally known as TPO rubbers. Their extension and retraction properties are notably different from those of thermosetting elastomers, but they are well adapted to such specific uses as wire and cable coating, automobile bumpers, vibration dampers, and specialized mechanical products.
>
> The same reference defines "thermoplastic" as follows:
>
> A high polymer that softens when exposed to heat and returns to its original condition when cooled to room temperature. Natural substances that exhibit this

behavior are crude rubber and a number of waxes; however, the term is usually applied to synthetics such as polyvinyl chloride, nylons, fluorocarbons, linear polyethylene, polyurethane prepolymer, polystyrene, polypropylene, and cellulosic and acrylic resins.

Grant & Hackh's Chemical Dictionary, Fifth Edition (1987) defines an "elastomer" as follows:

Contraction of "elastic polymer". A generic term (Fisher) for all substances having the properties of natural, reclaimed, vulcanized, or synthetic rubber, in that they stretch under tension, have a high tensile strength, retract rapidly, and recover their original dimensions fully.

Grant & Hackh define "thermoplastic as: "Rendered soft and moldable by heat." They refer the reader to "plastics" which they define, in part, as follows:

> A group of organic materials which, though stable in use at ordinary temperatures, are plastic at some stage of manufacture and then can be shaped by application of heat, pressure, or both. Synthetic rubber and certain inorganic materials, e.g., glass, comply with this definition but are not usually regarded as plastics. Cf. *elastomer, polymer*.

The Board is respectfully requested to affirmatively answer the question, "did the Examiner improperly read Korpman to include thermoplastic polymers, and as such, should the Board of Patent Appeals and Interferences determine Claims 1-6, 8-11, 32-33, and 36-40 are patentable over Korpman?"

VIII. CLAIMS

A copy of the claims involved in the present appeal is attached hereto as Appendix A. As indicated above, the claims in Appendix A do include the amendments filed by Applicant on August 22, 2005.

IX. EVIDENCE

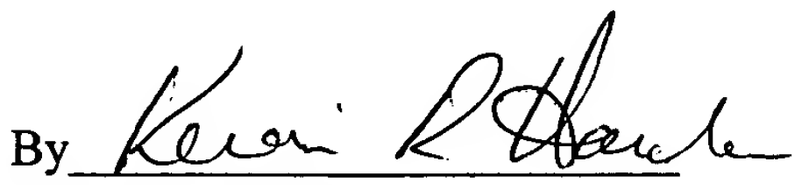
No evidence pursuant to §§ 1.130, 1.131, or 1.132 or entered by or relied upon by the examiner is being submitted.

X. RELATED PROCEEDINGS

No related proceedings are referenced in II. above, or copies of decisions in related proceedings are not provided, hence no Appendix is included.

Dated: October 23, 2006

Respectfully submitted,

By 

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APPENDIX A

Claims Involved in the Appeal of Application Serial No. 09/903,362

1. (Previously presented) An extruded, melt-mixed thermoplastic resin/superabsorbent polymer blend composition consisting essentially of

(a) one or more superabsorbent polymer and

(b) one or more thermoplastic resin comprising a functional group which interacts ionically or covalently with (a), the resin being a polyacrylic acid, ethylene and acrylic acid copolymer, ethylene, t-butylacrylate and acrylic acid terpolymer, ethylene and methacrylic acid copolymer, ionomers of ethylene and methacrylic acid copolymers, ethylene, vinyl acetate and carbon monoxide terpolymer, ethylene and carbon monoxide copolymer, ethylene, acrylic acid and carbon monoxide terpolymers, ethylene, n-butylacrylate and carbon monoxide terpolymer or blends thereof.

2. (Previously presented) The extruded thermoplastic superabsorbent polymer blend composition of Claim 1 having a melt draw down rate between about 5 and about 100 feet per minute and a melt tension between about 0.1 and about 10 under temperature and applied load conditions that give a melt flow rate of between about 0.1 and about 300 g/10 min.

3. (Previously presented) The extruded thermoplastic superabsorbent polymer blend composition of Claim 1 wherein the superabsorbent polymer is prepared from water-soluble α,β-ethylenically unsaturated monomers.

4. (Previously presented) The extruded thermoplastic superabsorbent polymer of Claim 3 wherein the α,β-ethylenically unsaturated monomers is a monocarboxylic acid, a vinyl polycarboxylic acid, an acrylamide or mixtures thereof.

5. (Previously presented) The extruded thermoplastic superabsorbent polymer blend composition of Claim 1 wherein the superabsorbent polymer is a cellulosic-graft copolymer, a starch-graft copolymer, a starch-g-poly(acrylic acid), a polyacrylamide; a polyvinyl alcohol, a poly(acrylic acid), a copolymer of sulfonic acid group containing monomer, or mixtures thereof.

6. (Previously presented) The extruded thermoplastic superabsorbent polymer blend composition of Claim 5, wherein the superabsorbent polymer is crosslinked, partially neutralized, surface treated or combinations thereof.

7. (Cancelled)

8. (Previously presented) The extruded thermoplastic superabsorbent polymer blend composition of Claim 1 further consisting essentially of a surfactant.

9. (Previously presented) The extruded thermoplastic superabsorbent polymer blend composition of Claim 1 further consisting essentially of a polyethylene, a copolymer of polyethylene, a polypropylene, a copolymer of polypropylene or polystyrene.

10. (Previously presented) A method for preparing an extruded thermoplastic superabsorbent polymer blend composition comprising the step of extruding a melt-mixed combination of:

(a) one or more superabsorbent polymer and

(b) one or more thermoplastic resin comprising a functional group which interacts ionically or covalently with (a) the resin being a polyacrylic acid, ethylene and acrylic acid copolymer, ethylene, t-butylacrylate and acrylic acid terpolymer, ethylene and methacrylic acid copolymer, ionomers of ethylene and methacrylic acid copolymers, ethylene, vinyl acetate and carbon monoxide terpolymer, ethylene and carbon monoxide copolymer, ethylene, acrylic acid and carbon monoxide terpolymers, ethylene, n-butylacrylate and carbon monoxide terpolymer or blends thereof..

11. (Previously presented) The method of Claim 10 further consisting essentially of the step of combining (c) a surfactant.

Claims 12 -31. (Cancelled)

32. (Previously presented) An extruded thermoplastic superabsorbent polymer blend composition consisting essentially of

(a) one or more superabsorbent polymer and

(b) one or more thermoplastic resin comprising a functional group which interacts ionically or covalently with (a), the thermoplastic resin being a polyacrylic acid, ethylene and acrylic acid copolymer, ethylene, t-butylacrylate and acrylic acid

terpolymer, ethylene and methacrylic acid copolymer, ethylene, vinyl acetate and carbon monoxide terpolymer, ethylene and carbon monoxide copolymer, ethylene, acrylic acid and carbon monoxide terpolymers, ethylene, n-butylacrylate and carbon monoxide terpolymer or a blend thereof), the composition having a melt draw down rate between about 5 and about 100 feet per minute and a melt tension between about 0.1 and about 10 under temperature and applied load conditions that give a melt flow rate of between about 0.1 and about 300 g/10 min.

33. (Previously presented) The extruded blend of Claim 1, wherein the thermoplastic resin is present in an amount of greater than 50 parts by weight but less than or equal to 99 parts by weight based on weight of the blend.

34. (Previously presented) The composition of Claim 1, wherein the thermoplastic resin is an ethylene/n-butylacrylate/carbon monoxide terpolymer.

35. (Previously presented) The composition of Claim 1, wherein the thermoplastic resin is an ethylene/vinylacetate/carbon monoxide terpolymer, the terpolymer having a carbon monoxide content of at least 9 percent by weight based on terpolymer weight.

36. (Previously presented) The composition of Claim 1, wherein the thermoplastic resin is an ethylene/acrylic acid copolymer,

37. (Previously presented) The composition of Claim 1, wherein the thermoplastic resin is an ethylene/acrylic acid copolymer, the copolymer having an acrylic acid content of from about 10 weight percent to about 20 weight percent based on copolymer weight.

38. (Previously presented) The composition of Claim 1, wherein the thermoplastic resin is an ethylene/methyl acrylate/methacrylic acid terpolymer.

39. (Previously presented) The composition of Claim 1, wherein the thermoplastic resin is an ethylene/methacrylic acid copolymer.

40. (Previously presented) The composition of Claim 1, wherein the thermoplastic resin is a zinc ionomer of an ethylene/methacrylic acid copolymer or a sodium ionomer of an ethylene/methacrylic acid copolymer.